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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/709,243	04/23/2004	Hideaki Takahashi	SIMTEK6895	3242

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EXAMINER
MULLINS, BURTON S

ART UNIT	PAPER NUMBER
2834	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	10/709,243	TAKAHASHI ET AL.
	Examiner	Art Unit
	Burton S. Mullins	2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 July 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7* is/are rejected.

7)☒ Claim(s) *8-14* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Okada (JP 63-011036). Okada (see attached translation) teaches an armature (stator) construction for a rotating electrical machine comprised of a core 13 consisting of a plurality of laminated plates (abstract; Figs.1&4) having a circular member from which a plurality of pole teeth radially extend (Figs.1-6), a pair of insulators 14 & 15 positioned on opposite axial sides of said core 13 and having cooperating tooth engaging portions 14e/15e completely encircling said pole teeth and receiving coil windings 16 there around (Figs.1-4&6; translation p.7-8: 14e and 15e are insulating tubes "inserted into so-called slots formed between the magnetic poles 13a…and cover the peripheral walls of said slots" see also p.2: "insulating members which covers said magnetic poles") and receiving and retaining the wire ends of the coil windings (translation p2., leaders/trailers of each stator coil soldered to printed wiring board 17; see also p.9), a wiring base (printed wiring board) 17 positioned on one axial side of one of said insulators (i.e., insulator 14; Fig.1), said wiring base 17 being made from an insulating material (translation, p.9), and axially facing interconnecting members 14a & 17b formed on said one insulator 14 and said wiring base 17 (Figs.2,4&5) for connecting said wiring base in a predetermined axial, radial and circumferential position (the interconnecting members 14a/14c inherently fix the position of plate 17 relative to all three positions).

Regarding claims 2 and 4, as seen in Figs.1&2 of Okada, the interconnecting members comprise a pair of interconnecting elements, one on each of the one insulator 14 and the wiring base 17.

Regarding claim 3, as seen in Fig.2 of Okada, the interconnecting members are circumferentially spaced.

Regarding claim 5, as seen in Figs.1-3 of Okada, the interconnecting elements are engageable upon relative axial movement of the wiring base 17 and the insulator 14 in one direction and once engaged prevent relative movement in a direction opposite the one direction (i.e., the base 17 engages the elements 14a axially in one direction, and is then prevented from further axial movement in either direction by notched structure of elements 14a).

Regarding claim 6, as seen in Fig.4 of Okada, the interconnecting elements 14a may be considered to comprise a "barbed hook" and a "receiver" therefore, i.e. a notched section receives the plate 17.

Regarding claim 7, there are a plurality of circumferentially spaced interconnecting members 14a and 17b in Okada.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ames (US 3,495,109) in view of Laurie (US 4,386,288). Ames teaches an armature (stator) construction for a rotating electrical machine comprised of a core (stack) 24 consisting of a plurality of

laminated plates (c.2:65-67; Fig.1) having a circular member (outer annular portion) 25 from which a plurality of pole teeth 26 radially extend (Figs.1&2; c.2:67-70), a pair of insulators (end forms) 31 & 32 positioned on opposite axial sides of said core 24 (c.3:12-20 & c.4:27-36) and having cooperating tooth engaging portions (ribs/intermediate portions) 37/38 encircling said pole teeth (intermediate portion 38 is convex and "encircles" pole tooth; Figs.4&7; c.3:23) and receiving coil windings 33 there around (c.3:21-36; Figs.5-6), a wiring base (printed circuit board [PCB]) 42 positioned on one axial side of one of said insulators (i.e., insulator 31; Fig.1), said wiring base/PCB 42 being made from an insulating material (inherent to PCB) and receiving and retaining the wire ends 45 of the coil windings 33 (i.e., by soldering each end 45 in apertures 44 of wiring base/PCB 42; c.3:68-75; Fig.3), and axially facing interconnecting members (hooks 47 and edge of 42) formed on said one insulator and said wiring base/PCB (Figs.3&4; c.4:7-14) for connecting said wiring base/PCB 42 in a predetermined axial, radial and circumferential position (the interconnecting members fix the position of wiring base/PCB 42 relative to all three positions; c.4:7-14).

Ames differs in that the tooth engaging portions of the pair of insulators 31 & 32 do not appear to *completely* encircle the pole teeth.

Laurie teaches a motor with annular molded insulators 31 and 32 positioned against ends 29 and 30 of stator pole unit 24 (Figs.1,3&6). Portions 39 of the insulators extend from arm 36 and cover both lateral surfaces of pole portions 28 (Fig.7), so that coils 33 are wound about the insulation-covered pole portions (c.2:50-65). Collectively, channel portions 35a, 36, 37 and 35b, 39, 40 of insulators 31 and 32 (Figs.6&7) form a continuous insulating channel about each pole (c.3:4-12).

It would have been obvious to modify Ames and provide insulators per Laurie which completely encircle the pole teeth since this would provide continuous insulation about each pole.

5. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al. (JP 2000-41371) in view of Yamaguchi et al. (JP 05-308742) and Laurie (US 4,386,288).

Yamada teaches an armature (stator) construction for a rotating electrical machine comprised of a core 15 consisting of a plurality of laminated plates (Figs.1&5) having a circular member from which a plurality of pole teeth 15b radially extend (Figs.1&3), a pair of insulators 17 positioned on opposite axial sides of said core 15 (Figs.1&5) and having cooperating tooth engaging portions 31 encircling said pole teeth (Fig.1) and receiving coil windings 16 there around (Fig.4), a wiring base (printed wiring board) 32 positioned on one axial side of one of said insulators (Fig.1), said wiring base 32 being made from an insulating material (inherent), and interconnecting members 28a and 33a formed on said one insulator 17 and said wiring base 32 (Fig.1; see machine translation [0022]& [0025]) for connecting said wiring base 32 in a predetermined axial, radial and circumferential position (the interconnecting members 28a/33a inherently fix the position of wiring base 32 relative to all three positions).

Yamada differs in that: 1) the wiring base 32 does not "receiv[e] and [retain]" ends of the coil windings; and 2) the pair of insulators 17 do not appear to *completely* encircle the pole teeth.

Regarding feature (1), Yamaguchi teaches a connecting method for windings of a stator wherein lead wires 22 from ends of stator winding 2 around each pole 11 are connected through holes 42 to a conductive pattern on an insulating board 3 (abstract). This provides a stator having a reduced number of parts without increasing core reluctance (abstract).

Regarding feature (2), Laurie teaches a motor with annular molded insulators 31 and 32 positioned against ends 29 and 30 of stator pole unit 24 (Figs.1,3&6). Portions 39 of the insulators extend from arm 36 and cover both lateral surfaces of pole portions 28 (Fig.7), so that coils 33 are wound about the insulation-covered pole portions (c.2:50-65). Collectively, channel portions 35a, 36, 37 and 35b, 39, 40 of insulators 31 and 32 (Figs.6&7) form a continuous insulating channel about each pole (c.3:4-12).

It would have been obvious to modify Yamada and provide a wiring base per Yamaguchi which receives and retains ends of the coil windings to reduce the number of parts without increasing core reluctance, and further to provide insulators per Laurie which completely encircle the pole teeth since this would provide continuous insulation about each pole.

Regarding claims 2 and 4, as seen in Fig.1 of Yamada, the interconnecting members comprise a pair of interconnecting elements 28/28a and 33/33a, one on each of the one insulator 17 and the wiring base 32.

Regarding claim 3, as seen in Fig.1 of Yamada, the interconnecting members 28/28a and 33/33a are circumferentially spaced.

Regarding claim 5, as seen in Fig.1 of Yamada, the interconnecting elements 28/28a and 33/33a are engageable upon relative axial movement of the wiring base 32 and the insulator 17 in one direction and once engaged prevent relative movement in a direction opposite the one direction (i.e., the base 32 engages the elements 28/28a axially in one direction, and is then prevented from further axial movement in either direction by notched structure of elements 28/28a).

Response to Arguments

6. Applicant's arguments filed 11 July 2007 have been fully considered but they are moot in view of the new grounds of rejection.

7. Regarding applicant's comments on Ames, it is noted that the interconnecting members (hooks) 47 can be considered "axially facing" since they protrude axially (Fig.6), or since each protruding end has a surface (not numbered) that "faces" in the axial direction (Fig.6).

Regarding applicant's comments on Okada, it is noted that as described on p.7-8 of the translation the insulating members comprise layers 14b/15b "covering both side surfaces in the stacking direction of the stator core 13" (i.e., axial ends of the core) while 14e and 15e are insulating tubes "inserted into so-called slots formed between the magnetic poles 13a...and cover the peripheral walls of said slots". Thus, the first and second insulating members 14 and 15 of Okada "completely encircl[e] said pole teeth" as claimed in claim 1. Regarding applicant's assertion that Okada does not "show any wiring base", this is incorrect since Okada teaches a wiring base (printed circuit board) 17. Further, the wire ends of the coil windings 16 are soldered to a copper foil pattern (i.e., a printed circuit, not shown) on the wiring base 17 (see p.2 & p.9 of translation) and thus the wiring base is "made from an insulating material and receiv[es] and retain[s] the wire ends of the coil windings".

Allowable Subject Matter

8. Claims 8-14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Regarding claim 8, the prior art does not teach that "there is further

provided on the wiring base and the insulator a cooperating cylindrical flange and circumferentially spaced interengaging shoulders for assisting in the radial positioning."

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Burton S. Mullins whose telephone number is 571-272-2029. The examiner can normally be reached on Monday-Friday, 9 am to 5 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on 571-272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Burton S. Mullins
Primary Examiner
Art Unit 2834

10 September 2007
bsm